

THE EMERGENCE OF STATE AND LOCAL POLICIES TO SUPPORT THE RECOGNITION OF ACADEMIC CREDIT FOR CTE COURSEWORK

hroughout the United States, administrators and teachers in American high schools face mounting pressure to increase the academic rigor of their curriculum in an effort to prepare students for postsecondary education and workforce success. Career and technical education (CTE) courses have often been overlooked in the public debate about making sure that students are exposed to rigorous academic content; however, there are an important series of innovative practices that have begun to bridge the gap between traditional academic courses and career-related courses. This paper examines an emerging approach that helps to meet the college and career readiness challenge – the recognition of academic credit for CTE coursework. This innovative approach is helping students to gain a deeper understanding of academic content that might have eluded them if it were presented only through abstracted and traditional classroom teaching approaches. It also helps them earn more and higher levels of academic credit toward their high school diploma.

PART 1: INCREASED GRADUATION REQUIREMENTS— RIGOR WITHOUT RELEVANCE?

As calls for a more rigorous curriculum increase in headlines around the country, many states and school districts have moved to increase high school graduation requirements in an effort to ensure all students are exposed to more advanced academic coursework. A number of states are participating in the American Diploma Project network, operated by Achieve, Inc., which is an effort to support states in raising their expectations for high school graduation to a level that represents academic readiness for college and skilled work. According to an analysis by Achieve, 20 states (Alabama, Arizona, Arkansas, Delaware, Georgia, Indiana, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, New Mexico, New York, North Carolina, Ohio, Oklahoma, South Dakota, Tennessee, Texas and Washington) and the District of Columbia have already increased their academic course-taking requirements to a level approximating Achieve's definition of college and career readiness. Another 10 states have indicated their intent to move in this direction in coming years.¹ As of 2009, 34 states are participating in the

During 2008, the Association for Career and Technical Education and Meeder Consulting Group, LLC worked to gather information on each state's CTE system from a variety of sources, including from each state's five-year plan for implementation of the Carl D. Perkins Career and Technical Education Act of 2006, interviews with key staff from each of the state agencies responsible for implementing CTE, and state and national Web sites. Through this process, we discovered a great deal of variation and innovation within CTE systems around the country.

This paper utilized information from the State Profiles project as a foundation, and led to additional research, including a survey of the state staff responsible for CTE and the Perkins Act. We were particularly interested in how states were explicitly helping, supporting or guiding the emergence of the recognition of academic credit for CTE coursework, given the strong movement of state policy to require increased graduation requirements.

To view the ACTE State Profiles, visit www.acteonline.org/ StateProfiles.aspx.

American Diploma Project, including enough states to cover almost 85 percent of the nation's school-aged population.

However, as state and local policymakers are requiring students to take more and higher levels of academic courses to improve their prospects for college and work readiness, a balance must be struck between increasing academic rigor and providing students with relevant and "realworld" instruction. While increasing graduation requirements set the stage for preparing students to be successful in postsecondary or workforce pursuits, presenting students with curriculum that explicitly links academic content to its real-world applications can keep them engaged and motivated.

There are two main factors that are leading many schools, districts and states to give fresh consideration to how these academic requirements

could be met. First, with an already high dropout rate (up to 50 percent in urban areas and between 20 and 30 percent on average nationally),² there is a concern that ratcheting up graduation requirements without new engaging forms of teaching and learning will simply encourage more struggling students to drop out.

Secondly, as graduation requirements are increased for math, science, social studies and in some cases foreign languages, the "squeeze out" factor emerges. This means that students have fewer open slots available for elective courses, often the ones that most fully engage their personal interest, provide a sense of confidence and accomplishment, and give them a reason for staying in school. As student enrollment in elective courses, like CTE, drops, these courses become at risk for elimination during times of school district belt tightening.

While many personal and academic factors may affect a student's decision to drop out of school, a 2005 report sponsored by the Bill and Melinda Gates Foundation states that this decision "is not a sudden act, but a gradual process of disengagement." The study found that 47 percent of dropouts indicated that "a major reason for dropping out was that classes were not interesting." Furthermore, 81 percent of dropouts responded that additional opportunities for "real-world learning" and "to see the connection between school and getting a good job" may have encouraged them to finish high school.

In the end, if public policy is structured to add more rigor without also strengthening a focus on purposeful learning (relevance), this could further exacerbate the dropout rate and achievement gaps that already exist.

PART 2: AN OVERVIEW OF ACADEMIC AND CTE INTEGRATION

To address this concern, educators are giving renewed attention to the issue of integrating academic content with content from CTE courses to ensure both rigor and relevance.

When academic and CTE content is presented in an integrated model, students are able to identify the real-world applicability of academic concepts. The contextualized learning that occurs through integration makes the connection between the academic content and the CTE content more explicit for students. Thus, their questions regarding "Why do I need to know this?" or "When will I use this?" are answered.

Although academic and CTE integration is not necessarily a new phenomenon in high school education, in the past the implementation of integration strategies has been fairly informal. Both the Carl D. Perkins Vocational and Technical Education Act of 1998 and the Carl D. Perkins Career and Technical Education Act of 2006 place a high importance on the integration of academic and CTE content. However, the federal law is not prescriptive in how this academic and CTE integration should occur. The 2006 Perkins Act aims to promote the development of services and activities that "integrate rigorous and challenging academic and career and technical instruction." As local plans are created for Perkins funds, school districts must demonstrate how they will "improve

WHEN ACADEMIC AND CTE CONTENT IS PRESENTED IN AN INTEGRATED MODEL, STUDENTS ARE ABLE TO IDENTIFY THE REAL-WORLD APPLICABILITY OF ACADEMIC CONCEPTS. THE CONTEXTUALIZED LEARNING THAT OCCURS THROUGH INTEGRATION MAKES THE CONNECTION BETWEEN THE ACADEMIC CONTENT AND THE CTE CONTENT MORE EXPLICIT FOR STUDENTS.

the academic and technical skills of students...through the integration of coherent and rigorous content aligned with challenging academic standards and relevant career and technical education programs..."

Beyond these broad parameters, states and localities have a great deal of latitude in how they carry out the intent of the Perkins provisions.

Through the years, there have been extensive studies about the forms and variations of academic and CTE integration, both in school settings and in community or workplace settings.⁴ One approach was developed and examined through the "Math-in-CTE" project carried out by the National Research Center for CTE.⁵ In this project, math and CTE teachers identified the math content that was already present in various CTE courses, and conducted curriculum alignment activities and created lesson plans to make that content much more explicit and consistent with terminology used in core academic courses. Through the project's specific methodology, a positive impact on student learning and the transfer of learning on several standardized math assessments was demonstrated. A positive side benefit was significant and sustained teacher collaboration.

Another approach is to more intentionally build additional content and applications of academic learning — literacy, mathematics, research, oral communications, use of technology — into a CTE course by reviewing state academic standards and supplementing the teaching of those standards in the CTE setting. In this case, CTE lesson plans may specifically address and reinforce academic standards.

A third approach is to contextualize teaching of academic content in the core academic classroom through the extensive use of real-world applications of academic knowledge. This provides the opportunity for students to apply and adapt the academic content they acquire to real-world situations and highlights the explicit connection between the two. The Center for Occupational Research and Development's series of *Learning in Context* textbooks for Geometry, Algebra I and Algebra II supports this approach.

Another approach to academic/CTE integration is the use of problem-based learning and cross-curriculum projects that link and align subject matter among two or more courses, focusing on a shared theme or activity. Career academies are an example of this approach. In this case, academic content is not only being brought into a CTE class, but through career academies, small groups of students study in a similar area of interest and content is connected across the disciplines. For example, throughout the cross-curriculum unit of study, activities may be integrated across an English course, a math course, a science course and a social studies course. All of these activities, while specific to the particular content area, are linked by their relevance to the thematic unit.

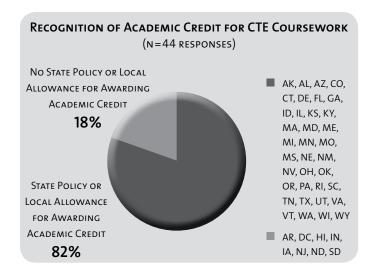
PART 3: THE MODEL FOR RECOGNITION OF ACADEMIC CREDIT FOR CTE COURSEWORK

Finally, there is another quite intensive variation of the academic/CTE integration theme. It is an approach we have termed "Recognition of Academic Credit for CTE Coursework." There are two primary types of courses that fall under this approach. One type of course is a hybrid course which consists of fully integrated academic and CTE content and is structured so that it counts for both academic (such as language arts, mathematics, science or social science) and elective CTE credit on a student's high school transcript.

Another type of course that falls under this approach is a CTE course that meets academic credit requirements for graduation. If a student enrolls in a specific CTE course or sequence of courses in which the content aligns with academic standards, then recognition of a full or partial academic credit toward high school graduation may be granted. For example, a pre-engineering course may fulfill a science credit requirement.

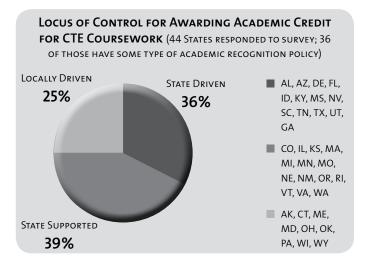
To gain further information about state activities related to the recognition of academic credit for CTE coursework, a survey was conducted with state CTE leaders on academic and CTE integration practices. 6 This survey of state-by-state policies highlights some of the different approaches states and localities may implement to support this particular type of integration strategy. Many variations of this phenomenon exist as policies and practices fall along the continuum from a state-directed approach to a locally driven approach.

Survey responses indicated that most states have policies or initiatives in place that allow for the recognition of academic credit for CTE coursework. Of the 44 states (including the District of Columbia) that responded, 36 of them, or 82 percent, indicated that they allow for the awarding of academic credit for CTE coursework either at the state or local level. While the remaining states responded that they do not have state policy or activity that either directs, supports or specifically allows recognition of CTE courses for academic credit, this activity may still be occurring in local practice.



From state to state, the policies and initiatives to establish and approve programs for the recognition of academic credit for CTE coursework range from being state driven, locally driven or a blend of these two approaches.

- State Driven: In 36 percent of states that recognize CTE coursework for academic credit, policies are primarily *state driven*. That is, such coursework tends to be developed and overseen at the state level and related policy guidance is provided to local districts from the state down.
- State Supported: In another 39 percent of the states, categorized as state supported, there are policies for the recognition of academic credit for CTE coursework, with a greater fusion between the roles played by and authority of the state and the localities. Often there is strong support for and mechanisms in place to allow for local control in granting academic credit, while at the same time the state provides guidance and support. For example, the state may offer model course development and approval processes for localities to reference when implementing integrated course programs.
- **Locally Driven:** In the remaining 25 percent of states with some type of academic recognition policy, categorized as locally driven, there is very little to no state involvement in the programs. Localities in these states have authorization to determine whether or not to award academic credit for CTE courses. However, it should be noted that in some states this authorization may not be explicit in state law or policy.



Types of State Support for Awarding Academic Credit for CTE Coursework

For the 27 states whose responses to the survey indicate that their policies fall under the *state-driven* or *state-supported* approaches, some variation exists in the types of programs established and the support provided by the state. Most of these states indicated that there is a specific state law or regulation in place that addresses the issue of awarding academic credit for CTE coursework. However, the implementation and support processes may differ to some extent. For example, 70 percent of these states indicated that they developed a state-approved

Types of State Support for Recognition of Academic Credit for CTE Coursework

STATE LAW OR REGULATION 24 STATES	Curriculum Framework 19 States	STATE-LED INITIATIVE 17 STATES
Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Kentucky, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington	Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Idaho, Kentucky, Massachusetts, Minnesota, Mississippi, Nevada, New Mexico, Texas, Tennessee, Utah, Vermont, Virginia, Washington	Alabama, Arizona, Colorado, Delaware, Florida, Kansas, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, Oregon, Tennessee, Texas, Vermont, Washington

curriculum framework to allow for awarding academic credit. These frameworks often include standards-based crosswalks and may identify specific curriculum and courses that have been approved for academic credit. Furthermore, of these 27 states, 63 percent responded that a state-led initiative to encourage or facilitate the recognition of academic credit for CTE coursework currently is in place. Professional development programs, technical assistance and grant funding to further implementation are examples of such initiatives. The following examples highlight how states are using state laws, curriculum frameworks and initiatives to develop integrated CTE programs in which CTE coursework may be recognized for academic credit.

PART 4: EXAMPLES OF RECOGNITION OF ACADEMIC CREDIT FOR CTE COURSES

Warren Tech High School, Jefferson County School District, Colorado: Local Innovation

In Colorado, the State Board of Education has encouraged more rigorous coursetaking requirements, as have local districts. A number of districts (for example, Denver, Jefferson County and Loveland) are working to create hybrid academic/CTE courses for joint credit to meet these requirements.

As a CTE regional high school in Jefferson County, Warren Tech is taking great strides to help students meet increased academic requirements through the development of integrated courses that count for academic and CTE credit. A concern that increased graduation requirements would result in a possible "squeezing out" of CTE courses in the curriculum served as the impetus for establishing a comprehensive collection of integrated courses. In 2006, faculty and staff began the process of developing these programs.

The systematic development process for integrated courses is critical to the success of Warren Tech's program. Through this process, which is listed below, various stakeholders are engaged, and the academic rigor of programs is ensured.

- Each CTE course must follow a course outline template that reflects units of instruction, explicit information on literacy standards and academic content standards.
- Assessments measure student learning in the core academic and CTE content.
- School district academic content specialists review the course to validate the rigor of the academic content and alignment to the district's standards.
- Course materials are presented to the district's content curriculum coordinator.
- Based on input from the coordinator, the course is revised and finalized.
- The finalized course is presented to the content curriculum director with a copy of the request for approval by the district's Department of Learning and Education Achievement, executive director and secondary reform coordinator.
- The curriculum is reviewed and approved by the district's chief academic officer.
- The approved curriculum is presented to the district's principals and counselors.
- Warren Tech coordinates with the school district's secondary reform coordinator to identify course numbering to be used to award academic credit.
- Warren Tech conducts an annual review of curriculum content against new CTE developments and/or revised district content standards.

One challenge to the program is making sure that administrators at other high schools in the area are willing to accept the academic credit Warren Tech awards. There appears to be a lingering perception among some administrators that such courses fail to provide the same level of

Warren Tech: Courses Recognized for Academic Credit

As of summer 2008, Warren Tech offers the following programs that count for either full or partial academic credit on the student's high school transcript (not just for elective credit):

- Auto Body Principles of Chemistry & Physics
- Auto Technology Algebra
- Biotechnology Molecular Biology, Genetics, Microbiology
- CAD/Drafting Geometry Principles
- Computer Technology/Video Game Design Computer Science Math
- Cosmetology (Esthetics, Hairstyling & Nail Tech) Anatomy with Lab
- Dental Assisting Anatomy with Lab
- Fire Science PE & Science (pending)
- Graphic Design Language Arts
- Health Sciences Technology Anatomy & Physiology & English/Language Arts
- Horticulture/Floral Design Plant & Soil Science
- Hospitality/Event Planning Language Arts
- Landscape Operations Science
- Multimedia Language Arts
- Power Equipment & Motorcycle Technology Physics
- Precision Machining Technology Math
- TV Video Language Arts

rigor as traditional academic courses. Due to such misconceptions, the principal engaged in marketing and communicated the notion that CTE programs are as rigorous as many traditional academic programs when implemented in a systematic manner. Fortunately, the superintendent shares the vision that such courses offer a sound pathway to graduation and has been a strong advocate for the program.

A second challenge faced by Warren Tech is meeting the highly qualified teacher provision of No Child Left Behind (NCLB). In order to address the issue, instructional coaches who are highly qualified in the specific content areas are the teachers of record for the CTE courses that award academic credit.

As of early 2009, 23 programs have been approved for academic credit at Warren Tech. It is possible that a student could earn up to three academic credits per year in one or more academic content areas through CTE coursework.

Washington State: State Support for Locally Developed Courses

In 2007, the Washington legislature passed a bill requiring high schools or local school districts to develop procedures for approving CTE coursework for whole or partial academic credit and for adopting course equivalencies. This past year, the legislature also approved grant funding to help some localities create course equivalencies in high-demand fields.

While the responsibility for approving and developing CTE coursework that awards academic credit ultimately is shouldered at the local level, state officials indicate that there is substantial guidance from the state. The 2007 legislation called for the establishment of a CTE advisory committee to help localities with the implementation process, and the committee created an online toolkit as an implementation guide for local districts. The toolkit includes detailed models of evaluation criteria and processes for developing integrated academic/CTE credit courses. Curriculum frameworks created by the Office of Superintendent of Public Instruction (OSPI) also are available to assist local districts. Finally, OSPI hosted a how-to workshop for localities on approving CTE courses for academic credit.

A fall 2008 survey of local school districts identified which districts have implemented an equivalency crediting process, the components of that process, and the number of courses that are receiving full or partial credit. One hundred and thirty-four of 250 high school districts responded to the survey (many small districts without significant CTE coursework did not reply). Seven hundred CTE courses throughout the state have been deemed to be equivalent (as a full or partial credit) to academic courses, including 142 equivalent in the field of math, 176 in science, 205 in the arts, 61 in health and fitness, 38 in social studies, 58 in English, and 12 in world languages. Examples of CTE equivalency

While the responsibility for approving and developing CTE COURSEWORK THAT AWARDS ACADEMIC CREDIT ULTIMATELY IS SHOULDERED AT THE LOCAL LEVEL, STATE OFFCIALS INDICATE THAT THERE IS SUBSTANTIAL GUIDANCE FROM THE STATE.

courses include Personal Finance and Accounting for math equivalency, and Economics and Interpersonal Relationships for social studies equivalency.

As Washington moves forward with this initiative, officials indicate that there are some challenges requiring further attention. Many local districts have not put in place a process for granting equivalency credits despite the legislation. Also, some stakeholders are waiting to see how financing for the program plays out and whether or not a proposal for increased graduation requirements that includes three credits in a "career concentration" moves forward in the legislature. Another hurdle is securing adequate funding to continue grants for course development. Further, smaller districts may lack sufficient capacity to implement such a program if there is a shortage of qualified teachers to teach the courses.

Ultimately, officials want to address these challenges and make sure they are able to sustain the course development movement that has begun to take hold throughout the state. There are also plans to eventually establish an evaluation process at the state level that provides longitudinal data on students who have taken CTE equivalency courses so that their progress may be tracked and analyzed and compared to students who have taken the academic equivalent course. When such data is available for analysis, officials believe they will be able to demonstrate the long-term benefits for students participating in the CTE equivalency courses. They believe a definite momentum shift has occurred within the state in terms of the value placed on CTE courses.

New York State: State Support for Locally Developed Courses

Since 2001, a New York Board of Regents' policy has required almost all high school students to take and pass a number of rigorous college preparatory exit exams to be eligible for a high school diploma. While comprehensive high schools also offer CTE courses, this policy had a particularly significant impact on regional technical schools in New York, which operate predominately on a partial-day format and did not offer academic courses. Administrators and teachers at these regional schools were concerned they would lose elective enrollments as students focused more time and energy on passing the Regents exams.

To counter this concern, policies were implemented allowing up to four integrated credits to be earned by students. In order to offer such courses, local districts must go through an overall CTE program approval process. Most of the work in developing the courses is conducted at the local level, and localities are afforded flexibility in the type of courses they offer to students. In order to ensure the content rigor of these courses, both academic and CTE teachers are included in the development process. Prior to approval, local districts must develop a curriculum map detailing how the academic content standards are addressed. An internal committee also reviews the curriculum map to attest to its rigor. After such reviews are conducted, the proposed courses and programs are presented to the state for final approval. At this point in the process, the local district attests that its program meets the required content standards.

Another option that local districts may offer is the specialized course. According to the New York Board of Regents' regulation "a specialized course develops the subject in greater depth and/or breadth and/or may be interdisciplinary. Successful completion of one unit of study in an interdisciplinary specialized course may be awarded only one unit of credit but may be used to meet the distribution requirements in more than one subject." While not all specialized courses are CTE courses, those that are may be approved locally without final state approval for academic credit. Both academic and CTE teachers are included in the development of such courses.

The challenge of the highly qualified teacher component of NCLB is addressed through several approaches. The CTE instructor of the joint academic/CTE credit course may demonstrate highly qualified status in an academic area through dual certification or through the NCLB HOUSSE (High, Objective, Uniform State Standard of Evaluation) method. Alternatively, a collaborative teaching model may be used. In this model, the academic and CTE teacher co-plan, co-deliver and co-assess instruction in the course. Both the CTE teacher and the academic teacher deliver instruction with the academic content teacher ensuring that academic content standards are addressed. The academic content teacher becomes the teacher of record.

Currently, it is estimated that of the 900 approved CTE programs, twothirds offer at least one integrated course that awards academic and CTE credit. Approximately one-fifth offer specialized courses. State officials report that the overall implementation of these courses has been a fairly smooth process in part due to the rigorous review process localities must conduct.

Kentucky: State-Driven Development of Interdisciplinary Courses

In 2006, the Kentucky Board of Education approved rigorous new graduation requirements, including three credits of science, three credits of social sciences, and three credits of mathematics, including Algebra I, Geometry and Algebra II.

These increased graduation requirements had been under review for some time, so in anticipation of these changes, the Kentucky Department of Education began to develop 11 interdisciplinary CTE courses for which students could be awarded academic credit toward these new requirements. Based on self reporting, it is now estimated that 82 high schools in Kentucky currently offer at least one of these state-approved interdisciplinary courses.

In an effort to ensure that academic rigor is not compromised, Kentucky followed a systematic process for developing its interdisciplinary courses. The following steps are key components of the development process:

- Program consultants review the core content and accountability testing for the academic area to ensure a solid fit exists between academic and CTE content.
- Academic teachers and CTE teachers participate in a curriculum mapping exercise. The teachers must agree that the proposed course is of high quality.

- The proposed course is sent to the State Board of Education for approval.
- Once approved by the Board, the course is entered into the Program of Study.
- At this point, local schools have the option of using the course.
 Site-based decision-making councils at each school have to approve the use of the course.
- If an interdisciplinary course will be substituted for an academic course, the local school board must submit a letter to the state Department of Education verifying that the course will be taught in such a manner that the core content standards will be addressed and the requirements for a highly qualified teacher will be met.

Kentucky: Providing Instruction from Highly Qualified Teachers

In Kentucky, the state has approved the curriculum content for a Construction/Geometry course in which the academic and CTE content are fully integrated. In this course, all of the required CTE content and required academic content are present. A student who takes this course receives a credit for the CTE course and a separate credit for Geometry. One challenge is working through the NCLB stipulation that requires the teacher of a course for which an academic credit will be earned to be certified as highly qualified in that content area.

While team teaching is one option for meeting this requirement and is a practice used for many of the other interdisciplinary courses offered in Kentucky, the state has been experimenting with ways to maximize the role of the academic teacher while minimizing the amount of time that teacher has to spend on the course. Over the last two years, Kentucky has implemented an innovative program in order to meet the highly qualified teacher provision for the Construction/Geometry course. By partnering with Kentucky Educational Television, the academic content for the course now is delivered to students through a DVD-recorded lesson presented by a master teacher. In addition to receiving instruction via this technology, students are then assisted further by their CTE teacher, who has been trained in the content area in order to reinforce concepts and provide assistance to students. Officials state that this program works most effectively when there is also a math teacher available on site with whom the CTE teacher can consult. Although this is a costly program to fund, officials indicate they would like to expand it.

State officials identified three challenges in implementing the interdisciplinary courses. According to officials, the biggest hurdle is obtaining buy in from teachers regarding the integrity and academic value of these courses. This is a particular issue facing academic teachers who feel ownership over students regarding high-stakes testing.

Another challenge that officials are addressing is meeting the highly qualified teacher requirements of NCLB. There are three ways in which Kentucky addresses this issue. CTE teachers may pursue dual certification. Another option is for academic and CTE teachers to collaborate in order to present the course content to students. The academic teacher may serve in an advisory role making sure that lesson plans and assessments are appropriate and providing

feedback and guidance to the CTE teacher. A third approach Kentucky has undertaken is virtual teaching. For its Construction Geometry course, geometry content is taught by a master teacher via a DVD.

A final challenge identified by officials is funding the implementation of interdisciplinary courses. For example, the partnership with Kentucky Educational Television for Construction Geometry is an innovative, yet relatively costly, program.

As work continues to address these challenges, Kentucky is also developing a statewide data system that will track student outcomes with regard to the interdisciplinary courses. At this point, officials are relying on self reporting from local schools for program information. Using this source of information, officials state that the results of the program thus far have been positive and believe that CTE students participating in these courses are progressing at faster rates than students in academic courses. They attribute this trend to the diligence applied to making sure the interdisciplinary courses are rigorous.

PART 5: KEY FACTORS IN IMPLEMENTATION

While there is not a one-size-fits-all integration model for recognizing CTE coursework for academic credit, these examples and survey responses do highlight the important role several programmatic and policy issues play in effectively implementing such programs. In order to maximize their chances for student and programmatic success, states and localities must address how they will systematize the course-development process to ensure academic rigor, address the highly qualified teacher provision of NCLB and obtain buy in from key stakeholders.

Develop a Systematic Process for Course Approval

A primary consideration to be addressed is to establish a systematic process for course development and approval. A review of the examples indicates that such a process most likely should include the following key components:

- a detailed review of academic content standards and course curriculum in order to ensure there is a natural fit between the academic and CTE content
- curriculum mapping, most likely conducted in collaboration between the academic and CTE teacher
- review of proposed course by academic content specialists to ensure its rigor and relevance
- · review and approval of proposed course by key stakeholders, such as state and local school boards, local schools and curriculum
- · ongoing monitoring of course content and student outcomes

As schools move forward in implementing programs that award academic credit for CTE coursework, they should ensure that processes are in place in order to prevent the ad hoc application of such programs and to ensure their rigor and relevance. A specific process can help build accountability into the system and provide clarity and direction for all stakeholders in terms of their expected roles and responsibilities.

WHILE THERE IS NOT A ONE-SIZE-FITS-ALL INTEGRATION MODEL FOR RECOGNIZING CTE COURSEWORK FOR ACADEMIC CREDIT, THESE **EXAMPLES AND SURVEY RESPONSES DO HIGHLIGHT THE IMPORTANT** ROLE SEVERAL PROGRAMMATIC AND POLICY ISSUES PLAY IN EFFECTIVELY IMPLEMENTING SUCH PROGRAMS.

Address the NCLB Highly Qualified Teacher Requirement

Second, states and localities must determine how to ensure that the NCLB requirement to have a highly qualified teacher is met for CTE coursework that awards academic credit. There are several options for addressing this issue. Teachers may become dual certified in both the academic content and CTE content areas. Alternatively, some variation of a collaborative teaching model may be implemented. This might entail the academic and CTE instructors team teaching a course for which they both share responsibility for planning, delivering instruction and assessing students.

Secure Buy In From Key Stakeholders

A final consideration for states and localities to address is how to secure buy in for such programs from key stakeholders, including teachers. parents and policymakers. For example, there may be concern that allowing students to receive academic credit for CTE coursework may hurt their chances for success on high-stakes testing. Therefore, steps must be taken to highlight the value of, and potential for, making learning relevant for students without sacrificing academic rigor. A comprehensive evaluation process to document the long-term educational and economic successes of these programs would address such concerns. By obtaining buy in from key stakeholders, the chances for their sustained involvement and commitment to establishing programs that allow for the recognition of academic credit for CTE coursework increase.

Conclusion

In recent years, national and state policymakers have established high targets for raising student academic achievement and high school completion levels. National policies propose that every student will graduate from high school and reach a level of academic proficiency that prepares them for postsecondary education and the workforce.

Some policymakers are recognizing that raising expectations alone will not be enough. There must also be a real investment in innovative practices to help high school students reach these new expectations. Unless teaching and learning are significantly improved in ways that reach many more students, it is unlikely these goals will ever be reached.

There is no question that creating and implementing CTE courses that are recognized for academic credit is a challenging endeavor, particularly in light of the need to address the teacher quality provision of NCLB and the development of cross-disciplinary curricula. However, in light of the growing need to creatively address student achievement, these innovative courses that break down the traditional barriers between

rigorous academic content and relevant career-related content are clearly worthy of significant investment and study.

The "Recognition of Academic Credit for CTE Coursework" model assures that students continue to have access to courses which engage their interest while simultaneously meeting requirements for increased rigor and provide academic credit required for graduation, a dual feat that cannot be matched by other models of integration.

While some local programs have been able to move successfully in this direction independently, national and state support can accelerate the development of awarding academic credit for CTE courses and helping students meet new rigorous academic requirements in a way that is relevant to their individual interests and learning styles. Policymakers at all levels can look to the examples provided by Warren Tech, Washington, New York and Kentucky as a foundation for efforts in their own states and communities. As the lines continue to blur between "academic" and "career and technical" content, students will be better served to face their future in the 21st century.

This report was prepared by Hans Meeder and Michelle Hebert-Giffen of Meeder Consulting Group, LLC (www.meederconsulting.com), a consulting firm providing research, analysis and strategic advisement on promising education practices.

ENDNOTES

- 1 Achieve, Inc., "Closing the Expectations Gap 2008," (Washington, DC: Achieve, Inc., February 2008).
- 2 Balfanz, Robert and Nettie Letgers "Locating the Dropout Crisis, Report 70," (Baltimore, MD: Johns Hopkins University, Center for Research on the Education of Students Placed At Risk, September 2004).
- 3 Bridgeland, John, John Dilulio, Jr. and Karen Butler Morison, "The Silent Epidemic: Perspectives of High School Dropouts," (Washington, DC: Civic Enterprises, LLC, March 2006).
- 4 Some previous reports are: Perin and Boehlen, "Integrating Academic and Career-Related Education, A Professional development Guide for Community College Faculty," (New York: Columbia University, Teachers College, November 1999); Grubb and Kraskouskas, "A Time to Every Purpose: Integrating Occupational and Academic Education in Community Colleges and Technical Institutes, MDS-251," (Berkeley, CA: University of California at Berkeley, National Center for Research in Vocational Education, September 1992).
- 5 Stone, James, Corinne Alfeld, Donna Pearson, Morgan Lewis and Susan Jensen, "Building Academic Skills in Context: Testing the Value of Enhanced Math Learning in CTE," (St. Paul, MN: University of Minnesota, National Research Center for Career and Technical Education, July 2006).
- 6 Survey responses were received from the following 44 states: AL, AK, AZ, AR, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MS, MO, NE, NV, NJ, NM, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WI and WY; and all analysis is based on state-provided responses.
- 7 Meeder, Hans, "Warren Technical High School: Focus on CTE Courses for Academic Credit," www.coloradostateplan.com/strategies.htm.



Association for Career and Technical Education 1410 King Street, Alexandria, VA 22314 800-826-9972 • Fax: 703-683-7424 www.acteonline.org

Educate. Advocate. Lead.